economic analysis of the HomePAP study, a multi-center randomized clinical trial that compared home-based versus lab-based testing for the management of OSA in accredited sleep centers. **METHODS:** A total of 373 subjects with a high risk for moderate to severe OSA were randomized to either unattended, home-based limited channel portable monitoring for diagnosis of OSA followed by unattended auto-titration with continuous positive airway pressure ("CPAP"), versus a traditional pathway of in-laboratory sleep study and CPAP titration. Given that 3 month outcomes were not inferior for the home arm in acceptance, adherence, and functional improvements, we pursued a cost minimization analysis from the payer perspective. 2011 Medicare price weights were used. Interpretation of home-based CPAP titration is currently not reimbursed by Medicare, so we estimated it as one-third the Medicare reimbursement for interpreting a lab-based sleep study. **RESULTS:** Per subject costs, as randomized, were $1265 for the lab-based pathway and $927 for the home-based pathway (base case). In the per protocol analysis (patients adherent to CPAP for 3 months), per subject costs were even higher for the lab-based pathway ($1,863 vs. $866). In a sensitivity analysis, even after increasing the Medicare reimbursement for home-based titration studies to 100% that of lab-based studies, per subject costs per protocol were still higher for the lab-based pathway ($1,863 vs. $953). **CONCLUSIONS:** From the payer perspective, there are higher costs incurred within a lab-based versus a home-based diagnostic pathway without superiority in outcomes. The results suggest that the careful use of home-based sleep studies administered by trained personnel at board-certified sleep centers could save money without compromising short term outcomes.

PMD39

PROJECTION OF HEALTH ECONOMICS BENEFITS OF CONTINUOUS GLUCOSE MONITORING VERSUS SELF MONITORING OF BLOOD GLUCOSE IN TYPE 1 DIABETES, IN SWEDEN

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OBJECTIVES: Improvement in glycaemic control associated with Continuous Glucose Monitoring (CGM) use leads to a reduction of costly diabetes-related complications. Our aim was to estimate the health economics benefits of CGM compared to Self-Monitoring of Blood Glucose (SMBG) in type 1 diabetes (T1DM) in the Swedish setting. **METHODS:** The Core Diabetes Model (CDM) is an internet-based, highly validated, computer-simulation model to determine the long-term health outcomes and economic consequences of diabetes interventions. This model was used to evaluate the cost-effectiveness of CGM versus SMBG in T1DM over a lifetime horizon. Results from a recently published meta-analysis comparing CGM versus SMBG and a real life observational Swedish study were used. The meta-analysis showed that for a cohort of T1DM with average baseline HbA1c of 8.1%, mean baseline age of 27 years and diabetes duration of 13 years, everyday use of CGM led to HbA1c reduction of -0.76% versus -0.13%, for CGM and SMBG respectively. The observational study demonstrated a reduction from 7.11 to 4.35 daily blood glucose tests when using CGM compared to SMBG only. **RESULTS:** The Incremental-Cost-Effectiveness-Ratio (ICER) for CGM vs. SMBG only was 369,253SEK (41,940€) per Quality-Adjusted-Life-Year gained (QALYg), based on combined direct and indirect costs. Undiscounted life expectancy was improved by 1.5 years. The improvement in discounted QALY was 0.62 in favour of CGM. CGM related costs were partially offset by the savings due to the reduction in long-term complications. CGM usage compared to SMBG increased the mean time alive free from complications. Sensitivity analysis has been conducted. **CONCLUSIONS:** Our analysis showed that CGM is very cost-effective compared to SMBG over a lifetime horizon in T1DM patients in the Swedish setting and can lead to an increase in life expectancy.

PMD40

COST-EFFECTIVENESS OF PRESENTATION AND DELAYED TROPONIN TESTING FOR ACUTE MYOCARDIAL INFARCTION

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OBJECTIVES: To estimate the cost-effectiveness of delayed troponin testing for myocardial infarction (MI), as recommended in current guidelines, compared to troponin testing at presentation. **METHODS:** We developed a decision analytic model to estimate the cost-effectiveness of diagnostic strategies for MI, measured as the incremental cost per quality-adjusted life year (QALY) gained by each strategy compared to the next most effective alternative. The model was applied to a hypothetical population of 1000 patients attending hospital with symptoms suggesting MI but a normal or non-diagnostic electrocardiogram (ECG) and no major co-morbidities requiring hospital treatment. Delayed troponin testing (10-12 hours after symptom onset) was compared to standard and high sensitivity troponin testing at presentation and no testing. We tested three different scenarios regarding delayed testing, in relation to the delay between results being available and a decision being made, the "doctor on demand" scenario, in which medical staff were available 24 hours a day to make a disposition decision within one hour of the results being available, twice daily ward round and once daily ward round scenarios where medical staff were only available at twice daily ward rounds and once daily ward rounds, respectively. **RESULTS:** In all scenarios tested presentation high sensitivity troponin testing was the most effective strategy with an incremental cost-effectiveness ratio (ICER) below the £20,000/QALY threshold. Delayed troponin testing was only likely to be cost-effective if a discharge decision could be made as soon as a negative result was available and the £30,000/QALY threshold was used. **CONCLUSIONS:** Delayed troponin testing is unlikely to be cost-effective compared to high sensitivity troponin testing at presentation in most scenarios. The current guidelines recommending 10-12 hour troponin testing does not appear to promote cost-effective use of hospital resources, unless services are in place to allow rapid decision making once delayed test results are available.

PMD41

INSULIN PUMP COST-UTILITY ANALYSIS COMPARED TO MULTIPLE DAILY INJECTION IN TYPE 1 DIABETIC PATIENTS IN THE MEXICAN SOCIAL SECURITY INSTITUTE, 21ST CENTURY HOSPITAL

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OBJECTIVES: To estimate the clinical and economic consequences of Continuous Subcutaneous Insulin Infusion (CSII) versus Multiple Daily Injection (MDI) for type 1 diabetes (DM1) through cost-utility analysis, from the perspective of the Mexican Social Security Institute (IMSS). **METHODS:** We used a validated simulation model (CORE Model), together with published literature for clinical, quality of life and therapy effectiveness. Demographic information and incident complications for 131 patients with DM1 from the 21st Century Hospital (IMSS) were incorporated into the simulation. Direct and indirect cost data were obtained from the IMSS and Secretary of Health (SSA) National Economic Information. A simulation of the clinical and economic consequences in a lifetime follow-up of therapy was performed. Direct and indirect costs with a discount rate of 3% were input to the model. **RESULTS:** Lifetime, treatment with CSII gained 8.5 quality-adjusted life years vs. 7.6 quality-adjusted life years for MDI therapy. Over 50 years of treatment, CSII versus MDI, had an incremental direct cost of 422,187 Mexican Pesos (MXP) per quality adjusted life year (QALY). For indirect costs, CSII is cost saving relative to MDI (saving 158,831 MXP/QALY). For combined direct and indirect costs, the incremental cost-effectiveness ratio for CSII vs. MDI was 283,356 MXP/QALY. **CONCLUSIONS:** Better glycemic control, and increased quality of life for DM1 patients treated with CSII demonstrated incremental cost effectiveness below the willingness to pay threshold set by the World Health Organization (510,300 MXP). This makes CSII a cost effective treatment alternative to MDI in Mexico. The higher incremental direct cost of CSII relative to MDI is compensated by the savings in indirect costs.

MEDICAL DEVICE/DIAGNOSTICS – Patient-Reported Outcomes & Patient Preference Studies

PMD42

COST-EFFECTIVENESS OF COFLEX® INTERLAMINAR STABILIZATION COMPARED WITH INSTRUMENTED POSTERIOR SPINAL FUSION FOR SPINAL STENOSIS AND SPONDYLOLISTHESIS

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OBJECTIVES: Back and leg pain arising from spinal stenosis with degenerative spondylolisthesis have a substantial impact on the quality of life of patients. Using data on collected costs, resource utilization, and patient-reported outcomes from an ongoing randomized clinical trial comparing a novel, motion-preserving interlaminar stabilization device (coflex®) to control (instrumented posterolateral spinal fusion) among patients with spinal stenosis and spondylolisthesis, we report and compare the relative cost-effectiveness of these two treatments. **METHODS:** A model was developed to compare interventions. The primary source for the model's clinical input parameters was the recent investigational clinical trial of coflex®, supporting premarket approval application to FDA. Treatment patterns over five years were estimated based on claims data analyses and expert opinion. Oswestry Disability Index scores collected during the trial were converted to utilities. A third-party payer perspective was used, and costs (US 2011$) and outcomes were discounted at 3% annually. Both Medicare and private-payer costs were modeled. Sensitivity analyses examined the influence of costs, utilities, and discount rates. **RESULTS:** Patients receiving coflex had higher success rates and lower costs in both the Medicare and private payer models. Payments over five years were estimated at $14,534 for coflex® implant patients compared to $25,620 for controls (Medicare costs; $17,714 vs. $31,747 for private coverage). Utilities were higher for coflex®-treated patients at all assessments, and totaled 3.03 quality-adjusted life years (QALY) compared to 2.98 for controls. Incremental cost-effectiveness could not be calculated, as the novel implant dominated, demonstrating both lower costs and better outcomes. Sensitivity analyses identified no scenario in which fusion was preferred over the coflex®. **CONCLUSIONS:** The use of coflex® to treat stenosis and spondylolisthesis is cost saving, and associated with improved patient outcomes. Subgroup analyses comparing indications and patient characteristics should be conducted to confirm robustness of findings.

PMD43

PREFERENCES OF MULTIPLE SCLEROSIS PATIENTS FOR ATTRIBUTES OF SELF-INJECTION DEVICES

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OBJECTIVES: Current multiple sclerosis (MS) disease modifying medications frequently require the use of self-injection devices. These can present varied burdens for patients in terms of their portability, complexity in preparation and potential for causing discomfort. Furthermore, the necessity to self-inject is closely associated with levels of adherence to treatment and optimising the acceptability of such